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to Dominick Montalbano, Engineer of Design, Airport

from Najib Budeiri Room No JSTC - 6

Date 6 / 9 / 81

cc: W. Connell, H. R. Pool, Jr., C. Vasquez

As requested we have reviewed and concur with the proposed draft specifications relating to the protective measures when working in existing asbestos fireproofed areas.

Attached are summaries of the EPA and OSHA regulations applicable to asbestos handling.

We recommend that all governmental regulations and proposed regulations be followed during any asbestos handling operation.

Najib Budeiri
Assistant Manager
Risk Management Division

NBIRP/dw

RISK MANAGEMENT DIVISION
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PLAINTIFF'S EXHIBIT
PX-651

APPENDIX G

U.S. ENVIRONMENTAL PROTECTION AGENCY REGULATIONS PERTAINING TO ASBESTOS

The U.S. EPA Regulations contained in Title 40, Code of Federal Regulations, Part 61, as amended, applicable to asbestos removal operations are summarized below:

Subpart A - General Provisions

This subpart contains definitions (61.02), regional EPA office addresses (61.04), waiver information (61.10), (61.11) and other pertinent information.

Subpart B - National Emission Standard for Asbestos

Section	Content
§61.21 Definitions	Terms relating to asbestos material, visible emissions, demolition, friable asbestos material, renovation, wetting, removal, stripping, and waste material are defined in this section.
§61.22 Emission standard, work practice requirements	Contains information on application of standards, notification requirements, stripping of friable asbestos material, wetting, exhaust ventilation systems, restriction of spraying of asbestos containing material, waste

Section

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Content

material handling and selling, and disposal regulations including site requirements.

Specifies the applicability of standard to stripping or removal of asbestos materials of more than 80 meters (260 feet) of covered pipe, or 15 square meters (160 square feet) of friable asbestos materials used to cover a structural member.

Written notification to Regional EPA Administrator is required 10 days prior to beginning of renovation (information to be provided is listed).

Procedure to prevent emissions are described: adequate wetting, local exhaust ventilation systems, proper movement and handling, and exceptions to wetting requirements.

Spraying of over 1 percent asbestos material on structural members is prohibited.

Waste disposal methods in renovation shall not produce visible emissions; waste material will be placed in locktight container while wet, and disposed of in sites in accordance with provisions of §61.25

Section	Content
§61.25 Waste disposal sites	This section contains regulations on emissions, access restrictions, sign posting, and operating methods for asbestos waste disposal sites.

Amendments to 40 CFR, Part 61 have been proposed and are found in the Federal Register of Wednesday, March 2, 1977. The proposed Amendment will resolve certain ambiguities and omissions in the present standard.

The applicability of regulations on renovations, removing and stripping asbestos is broadened by deletion of phrases which limit application of the regulation to asbestos sprayed for insulation and fireproofing only. The proposed changes would enable the terms to cover all sprayed friable asbestos material, for whatever the intended purpose.

The amendment also clarifies the definition of structural member, and specifically includes nonload-supporting members such as ceilings and walls in the scope of the regulation.

APPENDIX II

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS PERTAINING TO ASBESTOS

Applicable regulations of the Occupational Safety and Health Administration, U.S. Department of Labor are contained in Title 29, Code of Federal Regulations, Part 1910. Regulations specific to asbestos removal or stripping are contained in Section 1910.1001 et seq. and are summarized below:

Section 1910.1001	Content
(a) Lists definitions.	Definitions of asbestos and asbestos fibers, size limitation of 5 micrometers or longer.
(b) Sets limits for permissible exposure to airborne concentrations of asbestos fibers.	Eight-hour time-weighted average TWA of two fibers, longer than 5 micrometers, per cubic centimeter of air (f/cm^3). Maximum concentrations: 10 f/cm^3.
(c) Methods of compliance recommend methods to meet limits for exposure.	(1) Engineering methods: isolation, enclosure, ventilation, dust collection should be used to meet the exposure limits.

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(2) Worker protection: Wet methods will be used, insofar as practicable, to prevent the emission of fibers in excess of the limits.

(2)(iii) This section lists specific requirements for both respiratory protection and special clothing for removal workers.

(d) Personal protective equipment is specified for various conditions.

Respiratory protective equipment and special clothing are required whenever the exposure limits can reasonably be expected to be exceeded. Equipment approved by the agency is referenced.

Respiratory protection:

(d)(2)(i) Concentrations up to 10 times the allowable limit (20 f/cm^3 TWA, or 100 f/cm^3 ceiling limit): air purifying respirator.

(d)(2)(ii) Concentrations up to 100 times the limit (200 f/cm^3 TWA, or 1000 f/cm^3 ceiling limits) require powered air purifying respirator.

(d)(2)(iii) Concentrations above 100 times the limit require type "C"

Section 1910.1001	Content
	supplied air respirator, continuous flow or pressure demand class.
	(d)(3) Special clothing shall be provided if limits are exceeded. Includes coveralls, head coverings, foot coverings. When clothing requirement is met, laundering service or disposal should be provided.
(e) Method of measurement of fiber concentrations is defined.	Determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter collection method with phase contrast microscopy.
(f) Specific procedures of measurement and monitoring.	Personnel monitoring, environmental monitoring and frequency of monitoring are covered.
(g) Caution signs and labels are defined.	Specifications and use of signs are outlined. Posting of work sites and use of caution labels on asbestos material are described.
(h) Housekeeping to reduce exposure and waste disposal methods are described.	Cleaning of all objects of accumulated asbestos debris, and sealing in impermeable, sealed containers.

Section 1910.1001	Content
(i) Specifies recordkeeping and requirements for maintenance and retention of records.	Employer records on exposure. Time requirements and record disposition are covered. Records of monitoring should be retained for 3 years.
(j) Lists medical examination requirements.	Applicability, specific requirements, frequency of medical evaluations. Annual and termination examination requirements are listed.

A notice of proposed rule-making for occupational exposure to asbestos (29 CFR Part 1910) is found in the Federal Register, Thursday, October 9, 1975. The major issues relevant to removal and stripping operations contained in this proposal are:

1. Lowering of the exposure limits to 0.5 f/cm³ TWA and lowering of the ceiling limit to 5 f/cm³. Ceiling concentration sampling time is defined as a period up to 15 minutes.
2. The applicability of the standards to transient work forces, such as those found in demolition and removal is discussed. This reflects a concern for exposures in work places of a non-fixed nature, and resolves the ambiguities in this area.
3. No one type of respiratory protection is required in removal or stripping activities, but is in proportion to anticipated concentrations of asbestos.
4. The regulated area concept is introduced as any work area where a person may be exposed to airborne concentrations of asbestos fibers in excess of the limits imposed.

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5. Decontamination by showering is required.

6. An employee information and training program is required.

A revised recommended asbestos standard was promulgated by NIOSH in December 1976. The recommended exposure level in this document is 0.1 f/cm³ 8-hour TWA with ceiling concentrations not to exceed 0/5 f/cm³ based on a 15-minute sample. The essential purpose of this reduction is to materially reduce the risk of asbestos-induced cancer. The analytical technique of phase contrast microscopy is retained in this recommended standard.